

4.3.5.4.3 Air Quality and Noise

Construction and operation of an evolutionary LWR would generate criteria and toxic/hazardous pollutants. To evaluate the air quality impacts, criteria and toxic/hazardous concentrations from this facility have been compared with Federal and State standards and guidelines for each site. Impacts for radiological airborne emissions are discussed in Section 4.3.5.4.9.

Noise impacts during either construction or operation are expected to be low. Air quality and noise impacts are described separately. Supporting data for the air quality and noise analysis are presented in Appendix F.

AIR QUALITY

Construction and operation of the facility would result in the emission of some pollutants at each of the sites. Emissions would typically not exceed Federal, State, or local air quality regulations or guidelines.

The principal sources of emissions during construction include the following:

- Fugitive dust from land clearing, site preparation, excavation, wind erosion of exposed ground surfaces, and possible operation of a concrete batch plant
- Exhaust and road dust generated by construction equipment, vehicles delivering construction materials, and vehicles carrying construction workers

The PM₁₀ and TSP concentrations are expected to increase during the peak construction period. Appropriate control measures would be followed. It is expected that the sites will continue to comply with applicable Federal and State ambient air quality standards during construction.

Emission rates for operation of the evolutionary LWR are presented in Table F.1.3–14. Air pollutant emissions sources associated with operations include the following:

- Operation of diesel generators and periodic testing of emergency diesel generators
- [Text deleted.]
- Small quantities of toxic/hazardous pollutant emissions from facility operations

During operation, concentrations of criteria and toxic/hazardous air pollutants are predicted to be in compliance with Federal, State, and local air quality regulations or guidelines. The estimated pollutant concentrations from reactor operations plus the No Action concentrations are presented in Table 4.3.5.4.3–1. There are no toxic/hazardous chemical emissions associated with this facility.

NOISE

The location of the facilities associated with the evolutionary LWR facility relative to the site boundary and sensitive receptors was examined for each site to evaluate the potential contribution to noise levels at these locations and the potential for onsite and offsite noise impacts. Noise sources during construction may include heavy-construction equipment and increased traffic. Increased traffic would occur onsite and along offsite major transportation routes used to bring construction material and workers to the site.

Nontraffic noise sources associated with operation of these facilities include ventilation systems, cooling systems, vents, pumps, motors, emergency diesel generators, transformers, paging systems, and material

Table 4.3.5.4.3-1. Estimated Operational Concentrations of Pollutants and Comparison With Most Stringent Regulations or Guidelines—Evolutionary Light Water Reactor and No Action Alternative

Pollutant Criteria	Averaging Time	Most Stringent Regulations or Guidelines ^a (µg/m ³)	Hanford		NTS		INEL		Pantex		ORR		SRS	
			No Action (µg/m ³)	Total (µg/m ³)	No Action (µg/m ³)	Total (µg/m ³)	No Action (µg/m ³)	Total (µg/m ³)	No Action (µg/m ³)	Total ^b (µg/m ³)	No Action (µg/m ³)	Total (µg/m ³)	No Action (µg/m ³)	Total (µg/m ³)
Carbon monoxide	8-hour	10,000	0.08	0.09	2,290	2,290.01	284	284.02	602	602.07	5	5	22	22.06
Lead	1-hour	40,000	0.3	0.36	2,748	2,748.04	614	614.05	2,900	2,900.36	11	11	171	171.29
	Calendar Quarter	1.5	<0.01	<0.01	b	b	0.001	0.001	0.09	0.09	0.05	0.05	<0.01	<0.01
Nitrogen dioxide	24-hour	0.5	<0.01	<0.01	c	c	c	c	c	c	c	c	c	c
	Annual	100	0.03	0.04	b	<0.01 ^d	4	4.02	2.15	2.23	3	3	5.7	5.7
Ozone	1-hour	235	e	e	e	e	e	e	e	e	e	e	e	e
Particulate matter less than or equal to 10 microns in diameter	Annual	50	<0.01	<0.01	9.4	9.4	5	5	8.73	8.73	1	1	3	3
	24-hour	150	0.02	0.02	106	106	80	80	88.5	88.5	2	2	50.6	50.6
Sulfur dioxide	Annual	52	<0.01	<0.01	8.4	8.4	6	6	<0.01	0.01	2	2	14.5	14.51
	24-hour	260	<0.01	0.03	94.6	94.6	135	135.07	<0.01	0.24	32	32	196	196.22
	3-hour	1,300	0.01	0.2	725	725	579	579.28	<0.01	1.35	80	80.02	823	824.39
	1-hour	1,018	0.02	0.59	c	c	c	c	c	c	c	c	c	c
	1-hour	655 ^f	0.02	0.59	c	c	c	c	c	c	c	c	c	c
	30-minute	1,045	c	c	c	c	c	c	<0.01	3.63	c	c	c	c
Mandated by State														
Hydrogen fluorides (as HF)	30-day	0.8	b	b	c	c	c	c	<0.75	<0.75	0.2	0.2	0.09	0.09
	7-day	1.6	b	b	c	c	c	c	<0.75	<0.75	0.3	0.3	0.39	0.39
	24-hour	2.9	b	b	c	c	c	c	0.75	0.75	0.6 ^g	0.6 ^g	1.04	1.04
	12-hour	3.7	b	b	c	c	c	c	1.05	1.05	0.6 ^g	0.6 ^g	1.99	1.99

Table 4.3.5.4.3-1. Estimated Operational Concentrations of Pollutants and Comparison With Most Stringent Regulations or Guidelines—Evolutionary Light Water Reactor and No Action Alternative—Continued

Pollutant	Averaging Time	Most Stringent Regulations or Guidelines ^a (μg/m ³)	Hanford		NTS		INEL		Pantex		ORR		SRS	
			No Action (μg/m ³)	Total (μg/m ³)	No Action (μg/m ³)	Total (μg/m ³)	No Action (μg/m ³)	Total (μg/m ³)	No Action (μg/m ³)	Total (μg/m ³)	No Action (μg/m ³)	Total (μg/m ³)	No Action (μg/m ³)	Total (μg/m ³)
Hydrogen fluoride (as HF) (continued)	8-hour	250	b	b	c	c	c	c	c	c	0.6	0.6	c	c
	3-hour	4.9	b	b	c	c	c	c	4.21	4.21	c	c	c	c
	1-hour	112	c	c	b	b	c	c	c	c	c	c	c	c
Hydrogen sulfide	30-minute	111	c	c	c	c	c	c	b	b	c	c	c	c
	Annual	60	<0.01	<0.01	c	c	5	5	c	c	c	c	12.6	12.6
Total suspended particulates	24-hour	150	0.02	0.02	c	c	80	80	c	c	2	2	c	c
	3-hour	200	c	c	c	c	c	c	b	<0.01 ^d	c	c	c	c
	1-hour	400	c	c	c	c	c	c	b	<0.01 ^d	c	c	c	c
[Text deleted.]														

^a The more stringent of the Federal and State standards is presented for the averaging time.

^b No sources of this pollutant have been identified.

^c No State standard for indicated averaging time.

^d The concentration represents the alternative contribution only.

^e Ozone, as a criteria pollutant, is not directly emitted nor monitored by the sites. See Section 4.1.3 for a discussion of ozone-related issues.

^f At Hanford, the level is not to be exceeded more than twice in any 7 consecutive days.

^g Eight-hour averaging time concentration was used.

Note: Total concentrations are based on site contribution, including concentrations from ongoing activities (No Action), and do not include the contribution from nonfacility sources. Concentration for other hazardous/toxic pollutants reported for No Action in Section 4.2 are unchanged for this alternative and are not shown here.

Source: 40 CFR 50; ID DHW 1995a; ID DHW 1995b; LLNL 1996g; NV DCNR 1995a; SC DHEC 1991a; SC DHEC 1992b; TN DEC 1994a; TN DHE 1991a; TX ACB 1987a; TX NRCC 1992a; TX NRCC 1995a; WA Ecology 1994a.

handling equipment. These noise sources would be located at sufficient distance from offsite areas that the contribution to offsite noise levels would continue to be small. Due to the size of the site, noise emissions from construction equipment and operations activities would not be expected to cause annoyance to the public. Some noise sources may result in impacts such as disturbance of wildlife.